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EXAMINER

NGUYEN, CAM N

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/851,177**

Applicant(s)  
**Hu et al.**

Examiner  
**Cam Nguyen**

Art Unit  
**1754**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 8, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above, claim(s) 26-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on May 8, 2001 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3, & 6) ☐ Other:

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### DETAILED ACTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-25, drawn to a catalyst, classified in class 502, subclass 300+.
  - II. Claims 26-34, drawn to a process of preparing a catalyst, classified in class 502, subclass 104+.

The inventions are distinct, each from the other because:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process, such as by using a spray drying or a spray pyrolysis technique.
3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, and have acquired a separate status in the art as shown by their different classification, and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with *Mrs. Joan L. Simunic* on *January 29, 2003* a provisional election was made with traverse to prosecute the invention of Group I, claims 1-25. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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26-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

#### *Claim Objections*

6. Claims 1, 11, 16, 22, & 23 are objected to because of the following informalities:

A. It is suggested that applicants amend claim 1 & claim 11, from line 1 thru line 3, using the language as follows:

--1. (Amended) A catalyst for use in the Fischer-Tropsch process, said catalyst comprising a catalyst particle, which comprises at least one metal that is an efficient carbon monoxide adsorber, and at least one promoter dispersed on a support, etc.--.

--11. (Amended) A catalyst for use in the Fischer-Tropsch process, said catalyst comprising a catalyst particle, which comprises cobalt dispersed on a support, said particle is formed by the steps of: etc.--.

B. In claim 1, line 5, "being" should be --are--.

C. In claim 11, line 2, "being" should be --is--.

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- D. In claim 11, step (c), it is suggested applicants deleting the word “essentially”.
- E. In claim 16, line 2, “molecules” should be deleted for consistency with the language of claim 15.
- F. In claim 22, line 1, “being” should be deleted.
- G. In claim 23, line 2, “being” should be --is--.

Appropriate correction is required.

- 7. Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form

Claim 17 recites “said cobalt (II) complex is hexaammine cobalt (II) carbonate”. It appears that “hexaammine cobalt (II) carbonate” is not one of the complex compound listed in claim 16.

***Claim Rejections - 35 USC § 112 (Second Paragraph)***

- 8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 9. Claims 1-10 & 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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- A. Claim 1 recites the limitation "the metal oxide" in line 5-6. There is insufficient antecedent basis for this limitation in the claim.
- B. Regarding claim 6, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).
- C. In claim 16, the proper Markush terminology is --wherein said cobalt (II) complex has coordination sphere ligands selected from the group consisting of water molecules, ammonia, pyridine, diamineoethane, diethylenetriamine, triethylenetetraamine, and combinations thereof--. See MPEP § 2173.05(h).

***Claim Rejections - 35 USC § 102(b)/103***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claims 11-12, 14-21, 23, & 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shen et al., "hereinafter Shen", (US Pat. 5,962,367):

Shen discloses a cobalt molybdate catalyst supported on a titania support (see col. 5, ln 2-8). The support contains titania and has a surface area ranging from 80 to 200 m<sup>2</sup>/g, a pore volume ranging from 0.3 to 0.5 ml/g, and a pore diameter ranging from 60 to 200 Å (equivalent to 6-20 nm) (see col. 3, ln 1-6).

Regarding claims 11 & 15-21, recitation of product-by-process limitations in the claims is noted. While the catalyst of the reference is not made by the same process, the catalyst made is the same as the claimed catalyst. Further, it has been held that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even the prior art product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 12, the claim is met by the reference since Shen teaches a titania support, which is one of the support materials being claimed.

Regarding claim 14, the claimed support properties are met by the teaching of the reference since the disclosed surface area, pore volume, pore diameter, etc. fall within the claimed ranges (see Shen at col. 3, ln 1-6).

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Regarding claims 23 & 25, the claims require the catalyst further including a promoter is noted. It is considered the molybdenum disclosed by Shen is the claimed promoter in view of a lack of a specific promoter being claimed in these claims. Thus, the claims are met.

12. Claims 11-13, 15-21, & 23-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sapienza et al., "hereinafter Sapienza", (US Pat. 4,396,539).

Sapienza discloses a catalyst consisting essentially of cobalt and palladium or platinum or mixtures thereof supported on a solid phase selected from the group consisting of alumina, silica gel, kieselguhr, and zinc oxide (see col. 14, claim 3).

Regarding claims 11-13 & 15-21, recitation of product-by-process limitations in the claims is noted. While the catalyst of the reference is not made by the same process, the catalyst made is the same as the claimed catalyst. Further, it has been held that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even the prior art product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claims 23-25, the claims are met by the reference since Sapienza discloses platinum, which is the claimed promoter.



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***Allowable Subject Matter***

13. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not disclose or fairly suggest a catalyst comprising a catalyst particle comprising cobalt dispersed on a support which is stabilized by coated with oil.

14. Claims 1-10 are allowable for the following reasons:

The prior art does not disclose or fairly suggest a catalyst comprising a catalyst particle, which comprises at least one metal and at least one promoter dispersed on a support requiring said particle having a BET surface area of from about 100 m<sup>2</sup>/g to about 250 m<sup>2</sup>/g, and the crystallite size of the metal oxide is from about 40A to about 200A, in combination with the requirement that said particle having an essentially smooth, homogeneous surface morphology as recited in claim 1.

There is no motivation to combine the teachings of the references together.

Claims 1-10 are being rejected under 35 U.S.C. 112 (Second Paragraph). However, they would be allowed when the 35 U.S.C. 112 (Second Paragraph) issues are overcome.

***Citations***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Vannice et al. (US Pat. 4,171,320), Zennaro et al. (US Pat. 6,075,062), van Berge et al. (US Pat. 6,455,462 B2), Singleton et al. (US Pat. 6,100,304), Wilson et al. (US Pat. 5,780,381), Payne et al. (US Pat. 4,542,122), Singleton et al. (US Pat. 6,262,132 B1), Zennaro et al. (US Pat. 5,856,365), Dyer et al. (US Pat. 4,619,910), Mauldin (US Pat. 4,647,592), Beuther et al. (US Pat. 4,493,905), Kobylinski et al. (US Pat. 4,670,414), Kugler et al. (US Pat. 4,206,135), Murchison et al. (US Pat. 4,199,522), Fiato et al. (US Pat. 4,532,229), Wood et al. (US Pat. 4,559,364), Stiles (US Pat. 4,562,174), McVicker et al. (US Pat. 4,154,751), Kugler et al. (US Pat. 4,273,724), & Hu et al. (US Pat. 5,990,040) are cited for related art.

### ***Conclusion***

16. Claims 1-34 are pending. Claims 1-21 & 23-25 are rejected. Claim 22 is objected. Claims 26-34 are withdrawn due to nonelected (distinct) invention.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The examiner can normally be reached on M-F from 8:30 am. to 6:00 pm, with alternative Monday off.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (before finals) and (703) 872-9311 (after-final).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn *cnn*

March 21, 2003

A handwritten signature in black ink, appearing to read "Cam Nguyen", with a long horizontal stroke extending to the right.

Cam Nguyen

Patent Examiner